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Sandbox Boundaries

Hilary J. Allen¹

Around the world, subnational and national regulatory sandboxes are being adopted in an effort to promote fintech innovation. These regulatory sandboxes seek to achieve this by rolling back some of the consumer protection and prudential regulations that would otherwise apply to the firms trialing their financial products and services in the sandbox. While sacrificing such protections in order to promote innovation is problematic, such sacrifice may nonetheless be justifiable if, by working with innovators in the sandbox, regulators are educated about new technologies in a way that enhances their ability to effectively promote consumer protection and financial stability in other contexts. However, the market for fintech products and services transcends national and subnational borders, and this Essay predicts that as competition amongst countries for fintech business intensifies, the phenomena of regulatory arbitrage, race to the bottom, and coordination problems are likely to drive the regulatory sandbox model towards further deregulation, and disincentivize vital information sharing amongst financial regulators about new technologies. By examining the case studies of the regulatory sandboxes adopted by Arizona and the Consumer Financial Protection Bureau, as well as the proposals for transnational cooperation in the form of the Global Financial Innovation Network, this Essay suggests reason to be pessimistic about the prognosis for regulatory sandboxes in general, and information sharing across sandbox boundaries in particular.

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I. INTRODUCTION

The concept of using a “regulatory sandbox” to promote fintech innovation was pioneered by the United Kingdom’s Financial Conduct Authority (“FCA”) in 2016.² The FCA uses its sandbox to provide limited

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² Hilary J. Allen, *Regulatory Sandboxes* 87 Geo. Wash. L. Rev. __, __ (2019) (hereinafter, “Sandboxes”).

relief from financial regulation and enforcement, with the intention of reducing regulatory barriers to entry for fintech entrepreneurs who wish to test their innovations with real customers.³ Since 2016, several other countries around the world have adopted regulatory sandboxes for fintech – although what is meant by “regulatory sandbox” varies by jurisdiction.⁴ The term “fintech” itself also suffers from a lack of definitional consensus – it is perhaps best thought of as an umbrella term encompassing the latest wave of internet-enabled (and often data-driven) innovations, including cryptoassets and distributed ledger technologies, crowdfunding, mobile payments, marketplace lending, and robo-advisory services.⁵ These are all consumer-facing products and services – some commentators take the view that the term “fintech” also encompasses big data, artificial intelligence, high frequency trading and blockchain-based applications that are developed by financial institutions (or their vendors) for use in-house.⁶

Many of these fintech innovations are “being developed and deployed simultaneously in different financial markets”;⁷ the market for fintech products and services does not respect national borders.⁸ To date, however, regulatory sandboxes have only been created at national (sometimes even subnational) levels of government. From a practical perspective, this often creates a mismatch between the regulatory regimes for fintech innovation and the markets that the innovators wish to serve. As a response to this mismatch, the FCA has spearheaded the formation of a “Global Financial Innovation Network” of financial regulators (the “GFIN”).⁹ While the FCA had originally envisaged that the GFIN would coordinate a global regulatory sandbox that would facilitate multilateral trials of fintech innovations, it has since walked back that ambition in face of practical challenges.¹⁰ Instead, the GFIN is focused on coordinating regulators overseeing simultaneous cross-border trials.¹¹

³ Financial Conduct Authority, *Regulatory Sandboxes* (first published May 11, 2015; last updated April 29, 2019) (available at <https://www.fca.org.uk/firms/regulatory-sandbox>).

⁴ Sandboxes, *supra* Note 2 at __.

⁵ *Id.* at __.

⁶ *Id.* at __.

⁷ Global Financial Innovation Network (GFIN) Consultation Document, 3 (Aug. 2018) (available at https://files.consumerfinance.gov/f/documents/bcfp_global-financial-innovation-network_consultation-document.pdf).

⁸ In particular, the technologies of “AI, distributed ledger technology, data protection, regulation of securities and ICOs, know your customer (KYC) or anti-money laundering (AML), and green finance” are being developed on a global scale. GFIN Consultation Document, *supra* note 7 at 4.

⁹ *Id.*

¹⁰ Gina Conheady, *Is Fintech Ready for a Global Regulatory Sandbox?* (Nov. 27, 2018) (available at <https://www.algoodbody.com/insights-publications/is-fintech-ready-for-a-global-regulatory-sandbox>).

¹¹ GFIN Consultation Document, *supra* note 7 at 6.

The GFIN, as well as the sandboxes recently adopted by the state of Arizona and the Consumer Financial Protection Bureau (“CFPB”), are used as case studies in this Essay. These case studies afford an opportunity to reexamine the literature on regulatory arbitrage, races to the bottom, and coordination problems in the context of a borderless market for financial services that is being transformed by fintech innovations. This Essay demonstrates that a nuanced view of these phenomena, one that embraces the complexities of the incentives of public and private actors, is necessary to explain the evolution of sandboxes to date, and to make any predictions about how they are likely to develop in the future.

I have previously argued that the key benefit of the regulatory sandbox model is its ability to educate regulators on new technologies; that is the best justification that can be offered for a regulatory model that otherwise undoes prudential and consumer protection rules in the name of promoting innovation and competition.¹² This Essay will therefore explore how the information-generating characteristics of the regulatory sandbox will interplay with our understanding of regulatory arbitrage, races to the bottom, and coordination problems. Unfortunately, this Essay concludes that incentives are strong to cloister information within individual regulatory sandboxes, rather than sharing it across sandbox boundaries to improve regulatory practices everywhere.

The remainder of this Essay will proceed as follows: Part II will provide some background on the current state of regulatory sandboxes around the world, by explaining what they are and where they have been adopted. Part III will consider regulatory sandboxes in a more theoretical light, by exploring the competing regulatory goals implicated by the sandbox model. Part IV will provide a brief introduction to the literature on regulatory arbitrage, races to the bottom, and coordination problems, before using the GFIN and the Arizona and CFPB regulatory sandboxes as case studies that demonstrate the need for a nuanced understanding of these concepts. In so doing, Part IV provides reasons to be pessimistic about the evolution of regulatory sandboxes, both because of their potential to undo protections for consumers and the financial system more broadly, and because of the incentives that exist to stymie the flow of information about innovation amongst regulators. Part V concludes.

II. WHAT ARE REGULATORY SANDBOXES AND WHO HAS ADOPTED THEM?

The financial industry is highly regulated, and so technology entrepreneurs seeking to enter the market for financial services often face significant regulatory barriers to entry.¹³ Even for established financial institutions, determining how regulation will apply to a new financial

¹² Sandboxes, *supra* Note 2 at __.

¹³ *Id.* at __.

product can be a daunting and expensive exercise.¹⁴ Responding to regulation’s potential to hinder innovation by both startups and regulated entities, several jurisdictions around the world have adopted “regulatory sandboxes” designed to allow innovators to conduct a limited test of fintech products and services in a lenient regulatory environment.¹⁵ The United Kingdom’s FCA was the first to implement a fintech regulatory sandbox – since its inception in 2016, a number of other jurisdictions (including Australia, Bahrain, Brunei, Canada, Hong Kong, Indonesia, Malaysia, Mauritius, the Netherlands, Singapore, Switzerland, Thailand and the UAE) have followed its lead.¹⁶

It is important to note that there has been significant variance in the forms of the regulatory sandboxes that have been adopted. The term “regulatory sandbox” often means different things in different places.¹⁷ One summary of sandbox objectives around the world highlights this variance – depending on the jurisdiction, sandboxes may be adopted in order to:

- *Support financial innovation and FinTech firms who are seeking to offer innovative new products, services or business models.*
- *Foster a financial services system that is more efficient and manages risks more effectively.*
- *Understand how emerging technologies and business models interact with the regulatory framework and where it may lead to barriers to entry.*
- *Promote effective competition in the interest of consumers.*
- *Promote financial inclusion for consumers.*¹⁸

There is also significant variation in the practical implementation of regulatory sandboxes around the world. Some jurisdictions allow a broad range of financial products and services to be tested in sandboxes, whereas others (such as Australia and Hong Kong) are much more restrictive.¹⁹ Most jurisdictions place limitations on the duration of testing (typically, from six months to two years),²⁰ but a few outliers do not specify any limit

¹⁴ *Id.* at __.

¹⁵ *Id.* at __.

¹⁶ Dirk A. Zetsche, Ross P. Buckley, Janos N. Barberis and Douglas W. Arner, *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*, 27 (available at <https://ssrn.com/abstract=3018534>).

¹⁷ Sandboxes, *supra* Note 2 at __.

¹⁸ GFIN Consultation Document, *supra* note 7 at 17.

¹⁹ For a discussion of the limitations on the Australian sandbox, see Sandboxes, *supra* Note 2 at __. The Hong Kong sandbox is only available to licensed banks and technology firms that partner with licensed banks. Honk Kong Monetary Authority, *Fintech Supervisory Sandbox* (available at <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/fintech-supervisory-sandbox.shtml>).

²⁰ GFIN Consultation Document, *supra* note 7 at 8.

on the duration of the sandbox trial.²¹ The UK's regulatory sandbox was structured to promote iterative dialogue between innovators and regulators, but other jurisdictions (notably, Australia) have done less to promote this type of interaction.²²

The United States' Congress has not yet taken any action to implement a regulatory sandbox at the federal level. While some states have adopted or are contemplating adopting regulatory sandboxes (Arizona became the first U.S. state to formally adopt a regulatory sandbox in March of 2018,²³ and a sandbox bill is pending in Illinois),²⁴ such sandboxes can only allow for access to consumers resident in their state. At the federal level, the CFPB has attempted to implement a regulatory sandbox by way of executive action, but the legality of that effort is uncertain.

By way of background, in December 2018, the CFPB issued a "Policy on No-Action Letters and the BCFP Product Sandbox".²⁵ This Policy was designed as an update to the CFPB's Project Catalyst, which permitted "innovative financial firms [to] apply for "no-action letters.""²⁶ Project Catalyst did not allow the CFPB to provide relief from enforcement from the States, or any other federal financial regulatory authority, and so its utility was limited (only one firm sought a no-action letter from the CFPB in connection with Project Catalyst).²⁷ The new CFPB sandbox is designed to provide two years of exemptive relief to applicants, and the Policy purports to make the recipients of such exemptive relief "immune from enforcement actions by any Federal or State Authorities, as well as from lawsuits brought by private parties".²⁸ However, this attempt at preemption has been criticized as overreaching by twenty-two state attorneys general, who have argued that the CFPB "cannot give applicants such a blanket safe harbor protecting them from enforcement actions by state and federal authorities."²⁹ The Conference of State Bank Supervisors has also issued a letter stating

²¹ These jurisdictions include Hong Kong and Singapore. See Baker Mackenzie, *A Guide to Regulatory Sandboxes Across Asia Pacific* (available at https://www.bakermckenzie.com/-/media/files/insight/publications/2018/01/qrg_ap_regulatoryfintech_jan18.pdf?la=en).

²² Sandboxes, *supra* Note 2 at ___.

²³ Arizona Attorney-General Mark Brnovich, *Arizona Becomes First State in U.S. to Offer Fintech Regulatory Sandbox* (available at <https://www.azag.gov/press-release/arizona-becomes-first-state-us-offer-fintech-regulatory-sandbox>).

²⁴ Illinois SB3133.

²⁵ Bureau of Consumer Financial Protection (CFPB), *Policy on No-Action Letters and the BCFP Product Sandbox*, 83 CFR 64036 (2018).

²⁶ Rory Van Loo, *Making Innovation More Competitive: The Case of Fintech*, 65 UCLA L. Rev. 232, 260 (2018).

²⁷ Consumer Financial Protection Bureau, *CFPB Announces First No-Action Letter to Upstart Network* (Sep. 14, 2017) (available at <https://www.consumerfinance.gov/about-us/newsroom/cfpb-announces-first-no-action-letter-upstart-network/>).

²⁸ CFPB, *supra* Note 25 at 64042.

²⁹ Kate Berry, *State AGs Assail CFPB Plan to Build Fintech Sandbox*, AMERICAN BANKER (Feb. 12, 2019).

that “State regulators believe the extent of this relief exceeds the authority of the Bureau under Title X of the Dodd-Frank Act. While the Bureau can choose not to enforce federal consumer financial laws under its purview, the Bureau is not authorized to prevent state officials from enforcing federal consumer financial laws.”³⁰ It is therefore uncertain whether any federal regulatory sandbox is available in the United States.

There is also significant uncertainty about how to approach fintech at the transnational level. While international financial regulatory bodies like IOSCO and the FSB have highlighted issues relating to fintech business models, they have not yet attempted any concrete solutions or standards. Instead, their activities could best be described as monitoring, and generating research reports.³¹ In January 2019, however, the UK’s FCA helped found the GFIN, a transnational body focused on providing more concrete responses to the rise of fintech.³²

The GFIN’s primary functions are:

1. *to act as a network of regulators to collaborate and share experience of innovation in respective markets, including emerging technologies and business models, and to provide accessible regulatory contact information for firms;*
2. *to provide a forum for joint RegTech work and collaborative knowledge sharing/lessons learned; and*
3. *to provide firms with an environment in which to trial cross-border solutions.*³³

The GFIN’s ambitions to be a network and discussion forum for national regulatory bodies are not particularly novel (when considered in the context of existing international financial regulatory bodies like the FSB and IOSCO),³⁴ but the GFIN’s ambition to facilitate cross-border trials for new

³⁰ Letter of Paul Ryan of the Conference of State Bank Supervisors to Paul Watkins of the CFPB (Feb. 11, 2019) (available at https://www.csbs.org/sites/default/files/2019-02/CSBS%20Letter--CFPB%20NAL%20Policy%20Revisions%20and%20Product%20Sandbox_%20021119%20FINAL%20NOSIG.pdf).

³¹ See, for example, Financial Stability Board, FINANCIAL STABILITY IMPLICATIONS FROM FINTECH: SUPERVISORY AND REGULATORY ISSUES THAT MERIT AUTHORITIES’ ATTENTION (Jun. 27, 2017) (available at <http://www.fsb.org/wp-content/uploads/R270617.pdf>); IOSCO, IOSCO RESEARCH REPORT ON FINANCIAL TECHNOLOGIES (FINTECH) (Feb. 2017) (available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD554.pdf>).

³² Conheady, *supra* Note 10.

³³ Terms of Reference for Membership and Governance of the Global Financial Innovation Network (GFIN), 1 (available at <https://www.fca.org.uk/publication/mou/gfin-terms-of-reference.pdf>).

³⁴ For a discussion of the architecture of international financial law, see Chris Brummer, SOFT LAW AND THE GLOBAL FINANCIAL SYSTEM, 60 *et seq.* (2012).

technologies is a new development. While the FCA had initially envisaged “a full multilateral sandbox that allows concurrent testing and launch across multiple jurisdictions”, the level of regulatory coordination necessary for a project has been conceded as too ambitious for now.³⁵ However, even bilateral coordination on sandbox trials is likely to prove an interesting experiment. Although the GFIN has made clear that it does not desire to be “active in emerging trends, assessing and articulating international standards, and best practices”,³⁶ the cooperation of its members on cross-border sandbox testing will certainly be treated as a resource in developing best practices for sandbox development.

III. THE COMPETING REGULATORY GOALS IMPLICATED BY SANDBOXES

There are competing visions for regulatory sandboxes at the state, federal and international level. These competing visions revive old questions about regulatory arbitrage, races to the bottom, and coordination, and require us to reckon with how our theoretical understanding of such concepts applies in the context of a post-Financial Crisis world animated by new fintech technologies. To provide further background for such a discussion in Section IV, this Section will consider the goals that drive financial regulatory policies, and see how they may conflict as jurisdictions consider how to address fintech generally, and more specifically, whether to adopt regulatory sandboxes.

In their book *Principles of Financial Regulation*, Armour et al. identify the protection of consumers (and investors), financial stability, market efficiency, and competition (as well as preventing financial crime) as the primary goals of financial regulation.³⁷ Regulatory policy can sometimes promote all of these goals, but often the goals will conflict and in some contexts it will be necessary to prioritize some goals over others.³⁸ Policymakers that adopt regulatory sandboxes are often doing so in order to further the goals of efficiency and to promote competition.³⁹ Their hope is that sandboxes will incentivize innovation that enables cheaper and more efficient delivery of financial services,⁴⁰ and that sandboxes will also promote the competitiveness of a jurisdiction by enabling it to attract innovative businesses who will provide tax revenue and employment opportunities.⁴¹ Some sandboxes also speak of promoting consumer welfare, particularly by broadening access to and reducing the cost of

³⁵ Conheady, *supra* Note 10.

³⁶ GFIN Consultation Document, *supra* note 7 at 7.

³⁷ John Armour et al, *Principles of Financial Regulation*, 61-69 (2016).

³⁸ Hilary J. Allen, *The SEC as Financial Stability Regulator*, 43 J. Corp. L. 715, 730 (2018).

³⁹ GFIN Consultation Document, *supra* note 7 at 17.

⁴⁰ FCA, REGULATORY SANDBOXES LESSONS LEARNED REPORT, 9 (Oct. 2017) (available at <https://www.fca.org.uk/publication/research-and-data/regulatory-sandbox-lessons-learned-report.pdf>).

⁴¹ Zetzsche et al., *supra* Note 16 at 41-2.

financial services.⁴² Others sandboxes have the stated goal of improving risk management,⁴³ which may ultimately be beneficial from a financial stability perspective. The fact remains, however, that the regulatory barriers to entry that regulatory sandboxes seek to remove are typically regulations that protect consumers and/or the stability of the financial system. As regulatory sandboxes are being adopted around the world, the primary purpose for doing so seems to be the promotion of efficiency and competition.⁴⁴

Except in the immediate aftermath of a crisis, there tends not to be any constituency agitating for improved consumer protection and financial stability regulation – at least, not an organized constituency that can match the intensity of the interests seeking to roll back such regulation.⁴⁵ To the extent that regulators agree to roll back consumer protection and financial stability regulations for firms conducting sandbox trials, regulatory sandboxes can be viewed as a type of deregulation that can harm an unrepresented public. While it might be theoretically possible to replace consumer protection and financial stability rules with alternative arrangements (such as principles-based regulatory regimes) that are less burdensome on innovators but equally effective in protecting consumers and financial stability, principles-based regimes can easily devolve into deregulation if they are not properly staffed and resourced.⁴⁶ Such an outcome is particularly likely if the subject matter of the regime is highly complex and thus may defy regulatory understanding and incentivize deference to the regulated industry⁴⁷ – a real concern when dealing with complicated financial algorithms and other fintech innovations.⁴⁸ Sandboxes thus have very real deregulatory potential – but they can also afford some benefits to financial regulators seeking to promote consumer protection and financial stability. All such regulators share the need to understand the technology that is used to provide financial services, and I have argued that the most beneficial aspect of a regulatory sandbox is that it

⁴² GFIN Consultation Document, *supra* note 7 at 17.

⁴³ *Id.*

⁴⁴ Zetzsche et al., *supra* Note 16 at 41-2.

⁴⁵ John C. Coffee, *The Political Economy of Dodd-Frank: Why Financial Reform Tends to be Frustrated and Systemic Risk Perpetuated*, 97 CORNELL L. REV. 1019, 1021 (2012).

⁴⁶ For a discussion of the deregulatory impact of the principles-based regime adopted by the FSA (the FCA's predecessor), see Sandboxes, *supra* Note 2 at __.

⁴⁷ “Without countervailing, independent-minded regulatory power to push back against self-interested industry conduct, the “creep” may run downwards – to more risk, less transparency, less systemic stability, and less consumer protection.” Cristie Ford, *New Governance in the Teeth of Human Frailty: Lessons from Financial Regulation*, 2010 WIS. L. REV. 441, 479 (2010).

⁴⁸ “[I]f regulators come to rely on the providers of complex financial products and services for explanations about how they work, the result may be that regulation ultimately comes to reflect the worldview of the financial industry, rather than the objectives of society as a whole (this phenomenon is often referred to as “cognitive capture”).” Sandboxes, *supra* Note 2 at __.

provides a partial solution to the informational challenges that financial regulators face when dealing with new technologies.⁴⁹ I have therefore argued that sandboxes should be carefully designed to maximize information production and sharing, and to minimize harms to consumers and the financial system.⁵⁰

However, at this early stage, it is difficult to make concrete judgments about the extent to which regulatory sandboxes and the fintech innovations they promote are in fact sacrificing consumer protection or financial stability.⁵¹ For example, we do not yet fully comprehend the scope of the discrimination and privacy violations that consumers may be subjected to by financial algorithms capable of artificial intelligence.⁵² Nor do we fully comprehend the financial stability implications of delegating financial risk-management to such algorithms.⁵³ This is an argument for caution with respect to rolling back regulatory protections in regulatory sandboxes: as twenty-two State Attorneys-General stated in a letter to the CFPB, “The use of sophisticated technologies in the consumer financial market is not well understood, even by the creators of such technologies...Unless and until these technologies – and their implications for consumers – can be better understood, it would be irresponsible to give companies employing them what may effectively be a permanent get-out-of-jail-free card.”⁵⁴

Even the benefits of regulatory sandboxes for industry competitiveness are difficult to judge at this stage: fintech sandboxes have only been around since 2016, and so there are very limited empirical data from which to draw any conclusions about the extent to which sandboxes are succeeding in promoting competition.⁵⁵ In such an environment of uncertainty, policymakers’ decisions about whether to adopt and how to implement a regulatory sandbox are likely to be driven by value judgments about which regulatory goals to prioritize, and by political considerations. The choice of regulatory goals is likely to be impacted by the mandates of the various financial regulators implementing the regulatory sandbox. For example, the UK’s FCA, the progenitor of the fintech regulatory sandbox

⁴⁹ For a discussion of the difficulties that regulators face in finding out about the existence or new products and services, let alone understanding their complexities, see Hilary J. Allen, *A New Philosophy for Financial Stability Regulation*, 45 *Loy. U. Chi. L.J.* 173, 209 (2013).

⁵⁰ Sandboxes, *supra* Note 2 at ___.

⁵¹ *Id.* at ___.

⁵² Frank Pasquale, *Exploring the Fintech Landscape*, Written Testimony before the United States Senate Committee on Banking, Housing and Urban Affairs, 3-4 (Sep. 12, 2017) (available at https://www.banking.senate.gov/public/_cache/files/0a92ad09-6834-4d7e-901a-6ae5c51572ae/6F5BB3DB26E6C8891F7A5627A3678DCE.pasquale-testimony-9-12-17.pdf).

⁵³ Hilary J. Allen, *Driverless Finance* (unpublished manuscript on file with author).

⁵⁴ Berry, *supra* Note 29.

⁵⁵ Sandboxes, *supra* Note 2 at ___.

concept, has a mandate to promote competition that most US financial regulators lack.⁵⁶ In general, mandates to promote competition or efficiency are likely to render a regulator more hospitable to the promotion of technological innovation, which may help explain the FCA's enthusiasm for the regulatory sandbox model. However, I (and others) have previously argued that because of the breadth of the harm that financial crises can occasion, financial stability regulation should be the apex concern of any regulatory regime.⁵⁷ Consumer protection should also be a priority, to the extent that vulnerable consumers (unlike the industry providing them with products and services) are often unable to organize to protect themselves.⁵⁸ However, regulatory arbitrage, races to the bottom and coordination problems associated with regulatory sandboxes may ultimately undermine these important goals.

IV. REGULATORY ARBITRAGE, RACES TO THE BOTTOM AND COORDINATION PROBLEMS

(A) Theory and History

Regulatory arbitrage, races to the bottom and coordination problems are perennial issues in both domestic and international financial regulation. By way of background, Fleischer has defined “regulatory arbitrage” as “a perfectly legal planning technique used to avoid taxes, accounting rules, securities disclosure, and other regulatory costs. Regulatory arbitrage exploits the gap between the economic substance of a transaction and its legal or regulatory treatment”.⁵⁹ There are many strategies that can be used to achieve an economically equivalent outcome while avoiding legal constraints – in this Essay, I focus on the jurisdictional variant of regulatory arbitrage, whereby a market participant chooses to conduct business in a jurisdiction which affords a more favorable regulatory treatment to the business in question.⁶⁰ Jurisdictional arbitrage opportunities abound at the international level, and also within a federal system like the United States where market participants can pick and choose amongst different federal and state regulators. The ability for a market participant to choose their own regulator can lead to what is known as a “race to the bottom”, where jurisdictions compete to lower their regulatory standards in order to attract business, resulting in a general deregulatory trend.⁶¹ One jurisdiction's lowering of regulatory standards can have spillover effects, generating negative externalities that are felt even in jurisdictions with more stringent

⁵⁶ Financial Services and Markets Act (2000), Section 1E (UK).

⁵⁷ Hilary J. Allen, *Driverless Finance* (unpublished manuscript on file with author).

⁵⁸ See Note 45 and accompanying text.

⁵⁹ Victor Fleischer, *Regulatory Arbitrage*, 89 TEX. L. REV. 227, 229 (2010).

⁶⁰ Elizabeth Pollman, *Tech, Regulatory Arbitrage, and Limits*, 8 (2019) (available at <https://ssrn.com/abstract=3393288>).

⁶¹ For a discussion of the dynamics of “races to the bottom”, see Carnell, Macey & Miller, *THE LAW OF FINANCIAL INSTITUTIONS*, 5th ed., 65 (2013).

legal regimes;⁶² if a jurisdiction recognizes that its consumers and financial system may be harmed regardless of its own regulatory protections, it may seem logical to focus instead on reaping the benefits of innovation and competition by lowering regulatory standards itself.

Jurisdictional arbitrage and races to the bottom are often viewed as problems best solved by agreements to apply consistently high standards across jurisdictions.⁶³ If interpreted as simple coordination problems,⁶⁴ regulatory arbitrage and races to the bottom can be solved so long as jurisdictions share the information necessary to formulate the optimal regulatory solution, and trust one another enough to commit to that solution.⁶⁵ A more realistic perspective, however, recognizes that there is no one solution that is optimal for all parties involved: even with perfect information and trust, coordination can be elusive when jurisdictions have different incentives and policy preferences that they are trying to pursue.⁶⁶ As a result, the financial regulatory goals of consumer protection and financial stability (which, in the absence of a crisis, often lack an organized constituency to agitate for them)⁶⁷ have often been undercut by the forces of regulatory arbitrage and races to the bottom, facilitated by factions who prefer the regulatory goals of efficiency and competition.

Such dynamics have been witnessed at both the domestic and international levels. Domestically, these dynamics have generally been discussed under the rubric of “preemption”. Since the enactment of the National Bank Act in the 1860s, banks in the United States have had the option to charter at the national or the state level.⁶⁸ The implementation of this dual banking system ensured that issues regarding the extent to which

⁶² Coffee notes that when it comes to financial stability, “many nations do not have to internalize the costs they impose on others, some nations will behave as “free riders,” preferring that others bear the costs and encouraging regulatory arbitrage when it benefits them.” John C. Coffee, *Extraterritorial Financial Regulation: Why E.T. Can’t Come Home*, 99 CORNELL L. REV. 1259, 1269 (2014).

⁶³ “[T]he prevailing wisdom is that regulatory arbitrage can be counteracted by harmonization”. Pollman, *supra* Note 60 at 2. There are, however, some scholars who object to harmonization either because of its second order effects, or because harmonization can generate further opportunities for regulatory arbitrage in the implementation phase. For a discussion of the work of these scholars, see Hilary J. Allen, *What is “Financial Stability”? The Need for Some Common Language in International Financial Regulation*, 45 GEO. J. INT’L L. 929, 938-9 (2014).

⁶⁴ Coordination problems “are rooted in the need of certain kinds of uniformity on the one hand, and the absence of any inherent tendency for such uniformity spontaneously to emerge on the other hand.” Robert Hockett, *Recursive Collective Action Problems: The Structure of Procyclicity in Financial and Monetary Markets, Macroeconomies, and Formally Similar Contexts*, 3 J. FIN. PERSP. 1, 2 (2015).

⁶⁵ Chris Brummer, *How International Financial Law Works (And How It Doesn’t)*, 99 GEO. L. J. 257, 269-70 (2011).

⁶⁶ *Id.*

⁶⁷ See Note 45 and accompanying text.

⁶⁸ Carnell, Macey & Miller, *supra* Note 61 at 78.

federal financial regulation can preempt state financial regulation (and vice versa) have been alive for over a century. Over the years, the Office of the Comptroller of the Currency (the national bank regulator) has often sought to preempt – and often succeeded in preempting – state regulators trying to implement more stringent consumer financial protections.⁶⁹ In the lead up to the Financial Crisis, other federal regulators also paid limited attention to consumer financial protection with disastrous results,⁷⁰ and it took the Financial Crisis to galvanize support for more robust consumer financial protection regulation. The Dodd-Frank legislation enacted in the aftermath of the Financial Crisis sought to alter the status quo in two ways. First, it sought to reverse some of the federal preemption authority by increasing “both the lawmaking and law enforcement functions of the states in the area of consumer financial protection.”⁷¹ Second, it created a new federal agency in the form of the Consumer Financial Protection Bureau, with a mandate to “to implement and, where applicable, enforce Federal consumer financial law consistently for the purpose of ensuring that all consumers have access to markets for consumer financial products and services and that markets for consumer financial products and services are fair, transparent, and competitive.”⁷² Given that these steps were taken to avoid races to the bottom in the area of consumer financial protection regulation, there is an unmistakable irony in the CFPB now seeking to utilize the regulatory sandbox model to preempt state consumer financial protection laws (an issue this Essay will return to shortly).

At the international level, the primary concern is with regulatory arbitrage and races to the bottom with regard to financial stability regulation: the genesis of international financial regulation in the 1970s sprang from national concerns about spillover effects communicated from one jurisdiction to another by globalized capital flows.⁷³ An international consensus has since developed that the best way to avoid spillover effects is to coordinate the rules that apply to international financial activity, and international financial regulation has developed as a compilation of harmonized international standards.⁷⁴ However, the international financial regulatory standards adopted prior to 2008 were insufficient to prevent a global financial crisis in the form of a “subprime mortgage crisis in the

⁶⁹ See, for example, the seminal cases of *Marquette National Bank of Minneapolis v. First of Omaha Service Corp.* 439 U.S. 299 (1978), and *Barnett Bank of Marion County, N.A. v. Nelson* 518 U.S. 25 (1996).

⁷⁰ Kennedy, McCoy & Bernstein, *The Consumer Financial Protection Bureau: Financial Regulation for the Twenty-First Century*, 97 CORNELL L. REV. 1141, 1145 (2012).

⁷¹ Arthur E. Wilmarth, *The Dodd-Frank Act’s Expansion of State Authority to Protect Consumers of Financial Services*, 36 J. CORP. L. 893, 896 (2011).

⁷² Dodd-Frank Section 1021; See also Kennedy, McCoy & Bernstein, *supra* Note 70 at 1145.

⁷³ Brummer, *supra* Note 65 at 265-267.

⁷⁴ *Id.* at 268-269.

United States [that] acted as a trigger for a global bank run”.⁷⁵ In response, there was significant international regulatory activity with the goal of making the global financial system more resilient to a shock emanating from any one country,⁷⁶ but concerns about cross-border spillover effects remain notwithstanding this post-crisis reform. Part of the reason why there are still vulnerabilities in the international financial regulatory system is the fragmented nature of the international financial regulatory standards adopted to address those vulnerabilities (a reflection of the fragmentation of jurisdiction amongst United States’ domestic financial regulators).⁷⁷ The gaps between the standards provide opportunities for regulatory arbitrage, and agile new fintech technologies are likely to be particularly adept at exploiting these regulatory gaps.⁷⁸ International vulnerabilities have also been exacerbated by the increased use of the internet to facilitate the provision of financial services across national borders.⁷⁹

(B) Application to Regulatory Sandboxes

Understanding the standard accounts of preemption and international harmonization can assist us (at least to some degree) in understanding recent developments in regulatory sandboxes. For example, Arizona could be viewed as having lowered regulatory protections for consumers in order to encourage fintech entrepreneurs to set up in Arizona and thus arbitrage the regulatory environment of their home states.⁸⁰ Arizona’s actions could potentially spur a race to the bottom as states like Illinois and others contemplate their own regulatory sandboxes. While the CFPB could arguably invoke federal preemption to set a floor requiring Arizona and other states to maintain more stringent consumer protection rules, the CFPB has not evinced any desire to do so, and so there is no legal limit on innovators taking advantage of Arizona’s lowered regulatory standards.

In fact, the CFPB has purported to create its own regulatory sandbox that preempts consumer financial protection laws at both the state and federal level. The CFPB sandbox is designed to offer two years of relief

⁷⁵ Hilary J. Allen, *What is “Financial Stability”? The Need for Some Common Language in International Financial Regulation*, 45 GEO. J. INT’L L. 929, 930 (2014).

⁷⁶ Brummer, *supra* Note 65 at 265.

⁷⁷ Abraham L. Newman & Elliot Posner, VOLUNTARY DISRUPTIONS: INTERNATIONAL SOFT LAW, FINANCE AND POWER, 45 (2018).

⁷⁸ Pollman, *supra* Note 60 at 4.

⁷⁹ Rosa Lastra and Jason Grant Allen, *Cyberspace and Fintech Borders*, FINTECHPOLICY.ORG (Jan. 21, 2019).

⁸⁰ Zetzsche et al. have argued that one of the primary reasons for adopting a regulatory sandbox is its “signaling” function, in that it demonstrates a commitment to promoting fintech innovation in the hope of attracting entrepreneurs to the jurisdiction. Dirk A. Zetzsche, Ross P. Buckley, Janos N. Barberis and Douglas W. Arner, *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*, 41-2 (available at <https://ssrn.com/abstract=3018534>).

from regulatory compliance⁸¹ – this is longer than most jurisdictions offer, but not entirely an outlier position. What is an outlier (when compared with other sandboxes) is that relief need not be sought by individual firms – instead, “[t]he Bureau invites applications from trade associations, service providers and other third parties.”⁸² This will allow for much more expansive grants of regulatory relief than the typical sandbox, and if these grants preempt other state and federal consumer protection law, the CFPB’s regulatory sandbox could become a potent force for deregulation.

The CFPB is also a member of GFIN, the Global Financial Innovation Network spearheaded by the UK’s FCA. A simplistic account of the GFIN might view it simply as a coordination mechanism, an attempt by nations to develop apolitical and expert best practices as to the operation of a regulatory sandbox that maximizes efficiency and promote competition, while minimizing harm to consumers and financial stability. Taking this account further, once in place, such best practices should serve a coordination function, preventing regulatory arbitrage and races to the bottom with respect to the regulation of fintech innovation. For example, one commentator has noted that former tax havens, having capitulated to pressure to meet international standards with regard to preventing tax avoidance and evasion, are now increasingly adopting loose financial regulatory regimes to attract businesses associated with cryptoassets and blockchain.⁸³ This is perhaps the beginning of a race to the bottom, and the GFIN could theoretically play a role in arresting it.

The analysis in this Part B, however, relies entirely on simplistic theoretical foundations and is thus incomplete. It does not provide a compelling description of developments relating to regulatory sandboxes, because it does not contemplate the non-legal limits on using regulatory sandboxes as a tool for arbitrage, nor does it consider the potentially conflicting incentives of actors within a jurisdiction that decides to adopt or not adopt a sandbox. Furthermore, the second order effects that may flow from adopting regulatory sandboxes are missing from this Part B (and anticipated second order effects may be a key reason why an actor was for or against a sandbox in the first place). Finally, this Part B does not take into account the sensitivity and value of the information likely to be generated by regulatory sandboxes. The following Part C relies on cutting edge literature to provide a more complete description of trends with regard to regulatory sandboxes, and from these descriptions, is able to draw some normative conclusions.

⁸¹ Bureau of Consumer Financial Protection, *Policy on No-Action Letters and the BCFP Product Sandbox*, 83 CFR 64036, 64037 (2018).

⁸² *Id.* at 64043

⁸³ Omri Marian, *Blockchain Havens and the Need for Their Internationally-Coordinated Regulation*, 2 (2019) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3357168).

(C) Towards a More Nuanced Understanding of Regulatory Sandboxes

This Part C relies on recent literature on the incentives of political actors and the innovators themselves to develop a much more nuanced understanding of why regulatory sandboxes are being pursued, and how effective they are likely to be. For example, legal scholar Elizabeth Pollman has recently explored some of the non-legal constraints on technological innovators that limit their desire and ability to engage in regulatory arbitrage⁸⁴ – these help explain the limited appeal of Arizona’s sandbox. A state-based regulatory sandbox obviously only provides an innovator with access to consumers resident in that state,⁸⁵ but Pollman has observed that the availability of a skilled workforce, and a founder’s desire to live and work in a particular place, also act as a type of constraint that prevents entrepreneurs from simply moving their business to the most lightly regulated environment.⁸⁶ This may explain why, to date, only six firms have taken advantage of Arizona’s sandbox.⁸⁷ At this scale, Arizona’s sandbox provides only limited arbitrage opportunities, and is unlikely to inspire a problematic race to the bottom – in other words, the regulatory goals of consumer protection and financial stability are unlikely to suffer too much as a result of Arizona adopting its sandbox.

Pollman has also highlighted that technology services often require consumer trust and social legitimacy to thrive⁸⁸ – this is likely to be *fortiori* the case in the context of the technological delivery of financial products, which are credence goods (in the sense that a customer cannot immediately verify the quality or utility of the financial product, and thus must trust in the provider).⁸⁹ If the CFPB’s sandbox is interpreted by financial consumers as a backdoor for deregulation (a real possibility, given the publicity regarding the CFPB’s deregulatory turn under the Trump Administration), consumers may be unwilling to participate in its sandbox trials, thwarting attempts by innovators to test their products. Furthermore, many state regulators and attorneys-general are threatening to challenge any concrete assertion by the CFPB of its sandbox’s preemptory powers.⁹⁰ These concerns about the participation of consumers, as well as legal challenges to the preemptive aspects of the CFPB’s sandbox, may ultimately render it unattractive to innovators. As with the Arizona sandbox, concerns

⁸⁴ Pollman, *supra* Note 60.

⁸⁵ Sandboxes, *supra* Note 2 at ___.

⁸⁶ Pollman, *supra* Note 60 at 28-30.

⁸⁷ Arizona Attorney General Mark Brnovich, *Sandbox Participants* (available at <https://www.azag.gov/fintech/participants>).

⁸⁸ Pollman, *supra* Note 60 at 23-24.

⁸⁹ Iris H-Y Chiu, *Fintech and Disruptive Business Models in Financial Products, Intermediation and Markets – Policy Implications for Financial Regulators*, 21 J. TECH. L. & POL’Y 55, 74 (2016).

⁹⁰ See Notes 29-30 and accompanying text.

about regulatory arbitrage and races to the bottom may be neutered by limited uptake of the regulatory sandbox.

The CFPB is trying to build legitimacy for its sandbox in another arena, however – it is the only US regulator to have joined the GFIN.⁹¹ In their book “Voluntary Disruptions”, political scientists Newman and Posner highlight that international financial regulation is sometimes used as a tool to help factions promote their agendas domestically.⁹² They observe that when policy actors find themselves blocked at the domestic level, they will sometimes seek to “expand the arena” to include transnational negotiations, allowing them to disrupt the domestic policy debate.⁹³ If the GFIN ultimately develops international best practices for sandbox design, the CFPB may be able to invoke these best practices in order to lend legitimacy to its regulatory sandbox, with the goal of making it harder for US states to challenge the sandbox and thus rendering it more attractive to innovators. However, the fact that the CFPB is the only US regulator that is a member of the GFIN might equally be invoked by state regulators in the United States as undermining the legitimacy of the GFIN’s practice.⁹⁴

As an international body, the GFIN will obviously have impacts beyond the United States as well. A realpolitik account of the GFIN might see it as a tool spearheaded by the FCA to ensure that subsequent regulatory sandboxes adopted in other countries do not offer significantly more relaxed regulatory environments, attracting fintech innovation away from London towards other jurisdictions. Singapore and Hong Kong seem like particularly threatening potential rivals that the FCA may seek to hold in check with baseline standards – especially once London tech entrepreneurs will no longer have unfettered access to the continental European markets post-Brexit, and thus have less reason to stay in London.

Speaking of the European markets, the European Banking Authority⁹⁵ and the European Commission⁹⁶ are reportedly contemplating the adoption of an EU-wide regulatory sandbox for fintech, but BaFin (the powerful German financial regulator) has expressed vocal opposition to

⁹¹ GFIN Consultation Document, *supra* note 7 at 14.

⁹² Newman & Posner, *supra* Note 77 at 4.

⁹³ *Id.* at 5.

⁹⁴ “There are plenty of instances when soft law or the bodies that produce it are framed as suffering from bias or lacking the technical expertise that others claim or the accountability expected in a democracy.” *Id.* at 26-7.

⁹⁵ Huw Jones, *EU Guidelines on Fintech to Include “Sandbox” Design Recommendations* REUTERS (Sep. 6, 2018) (available at <https://www.reuters.com/article/us-eu-banks-regulator/eu-guidelines-on-fintech-to-include-sandbox-design-recommendations-idUSKCN1LM25V>).

⁹⁶ European Commission, *FinTech: Commission Takes Action for a More Competitive and Innovative Financial Market* (Mar. 8, 2018) (available at http://europa.eu/rapid/press-release_IP-18-1403_en.htm).

regulatory sandboxes in general.⁹⁷ Again, Newman & Posner’s explanation of “legitimacy claims” and the “arena expansion” second order effects of international soft law standards is helpful in exploring this dynamic.⁹⁸ If the GFIN develops international best practices for regulatory sandboxes, then those could lend legitimacy to the structure that might assist sandbox proponents within Germany, and Europe more broadly, to overcome BaFin’s resistance. BaFin might, however, seek to impugn the legitimacy of anything developed by the GFIN, particularly because neither BaFin nor any other European financial regulator (other than the FCA) is a member of the GFIN. This absence of European regulators from GFIN is conspicuous – perhaps it can be attributed to tensions over Brexit, and the desire to limit any FCA ambitions to expand its arena of influence through GFIN even as it loses clout within the European Union.

Speaking more generally, though, foreign examples of regulatory sandboxes are likely to lend legitimacy to those seeking to implement regulatory sandboxes in their own jurisdiction in order to prioritize the regulatory goals of innovation and competition⁹⁹ (at the potential expense of consumer protection and financial stability). In this sense, the GFIN may serve as a useful forum not only for policymakers and regulators, but also for innovators and industry associations lobbying to expand access to regulatory sandboxes¹⁰⁰ – particularly because the GFIN has signaled that “being accountable to industry is important to GFIN.”¹⁰¹

This more nuanced exploration of the GFIN portends a deregulatory trend in regulatory sandboxes, both because of the GFIN’s anticipated deference to industry interests,¹⁰² and because only regulators who have evinced “a commitment to supporting financial innovation” can become members of the GFIN.¹⁰³ There is no place in the forum for regulators who are simply concerned by the impact that financial innovation might have on consumers or the stability of the financial system at large; this means that regulatory bodies that are more skeptical of fintech innovation may be left out of the conversation. (Other international financial regulatory

⁹⁷ Conheady, *supra* Note 10.

⁹⁸ Newman & Posner, *supra* Note 77 at 5.

⁹⁹ “[A] company might engage in a sophisticated strategy of sequencing wins in locations that can build leverage for taking on intransigent regulators in other important markets.” Pollman, *supra* Note 60 at 34.

¹⁰⁰ Pollman has noted that private sector entities will sometimes seek to change the law in circumstances where regulatory arbitrage will not achieve their business goals. Pollman, *supra* Note 60 at 33.

¹⁰¹ GFIN Terms of Reference, *supra* Note 33 at 7.

¹⁰² The GFIN notes that “ While other stakeholders including industry, firms and private institutions are not formally a part of GFIN due to the conflict of interests, their views are welcome and necessary to ensure that GFIN remains relevant for all stakeholders.” GFIN Terms of Reference, *supra* Note 33 at 7. No mention is made of facilitating access for other stakeholders.

¹⁰³ *Id.* at 3.

organizations FSB or IOSCO, who focus (respectively) on financial stability and investor protection, have yet to take an active role in this space).¹⁰⁴ However, I have previously argued that – notwithstanding their deregulatory potential – an important argument can be made in favor of adopting regulatory sandboxes as a “trial for new regulatory approaches to coping with (rather than promoting) inevitable financial innovation.”¹⁰⁵ In particular, regulators can use the sandbox to learn about nascent technologies that they will most likely have to grapple with at some point, irrespective of whether they adopt a regulatory sandbox.¹⁰⁶ The remainder of this Part will consider how effective the GFIN, as well as the sandboxes created by Arizona and the CFPB, are likely to be in promoting regulatory learning in practice.

Highlighting the importance of regulatory learning serves as an indictment of the CFPB’s proposed sandbox: if information sharing is viewed as the quid to the pro of lowered regulatory standards, then the CFPB’s proposal, which anticipates providing relief to “trade associations, service providers and other third parties” as well as individual firms, is clearly lacking.¹⁰⁷ It is hard to envisage how a blanket regulatory exemption granted to a body like a trade association would facilitate the same degree of regulatory learning as a working relationship with an individual innovating firm. Small subnational sandboxes like Arizona’s are also unlikely to produce any deep cross-sectoral regulatory knowledge, given that they are likely to trial only a few, disparate innovations. Regulatory sandboxes should instead be designed to maximize information production and transfer – some sandboxes, such as the FCA’s, have features that are likely to make them more successful at information production.¹⁰⁸ Unfortunately, however, the developments discussed in this Part do not bode well for the *sharing* of information across sandbox boundaries.

Particularly when it comes to technological innovations that may impact financial stability, the operators of small, subnational regulatory sandboxes (like Arizona) have limited incentives to share any information they may uncover during testing (financial stability is a borderless public good that will accrue largely to persons residing outside of their state).¹⁰⁹ Given that fintech markets are borderless, the ideal sandbox would facilitate

¹⁰⁴ See Note 31 and accompanying text for a discussion of the FSB’s and IOSCO’s current approaches to fintech innovation.

¹⁰⁵ *Id.* at ____.

¹⁰⁶ *Id.* at ____.

¹⁰⁷ See Note 82.

¹⁰⁸ “In the FCA sandbox, each firm will be allocated a dedicated case officer, and given “a high degree of bespoke engagement from [the FCA’s] staff”. Sandboxes, *supra* Note 2 at ____, citing Christopher Woolard, Speech at the Innovate Finance Global Summit (Apr. 11, 2016).

¹⁰⁹ Daniel Schwarcz and Steven L. Schwarcz, *Regulating Systemic Risk In Insurance*, 81 U. CHI. L. REV. 1569, 1628 (2014).

information sharing at the international level. However, there are likely to be impediments to transnational sharing of sensitive commercial information garnered from sandbox trials. It is certainly true that financial regulators have shared information about regulatory best practices with one another for decades, at both the domestic and the international levels.¹¹⁰ They have also shared information about market participants, but traditionally, the information shared has been germane to the financial condition of those firms.¹¹¹ What is distinct about the regulatory sandbox is the constant dialogue between regulator and innovator about the development of new technology: as I have argued previously, “[i]t is this expectation of ongoing engagement that differentiates the regulatory sandbox from other regulatory waivers and exemptions.”¹¹² As countries adopt regulatory sandboxes, sensitive information about technological developments will be pertinent to financial regulators not only in their capacity as regulators, but also in their capacity as facilitators of private firms’ innovation – a shift acknowledged by the GFIN.¹¹³ Some regulators may therefore want to keep information about technological innovation to themselves, fearing that if shared, it could be used to assist foreign firms competing in the fintech market.

Carnegie & Carson’s recent paper on disclosures by nation states to the World Trade Organization provides a starting point for examining the “disclosure dilemmas” that arise when national authorities are called upon to share commercially sensitive information about the activities of their firms.¹¹⁴ As mentioned in the previous Section, coordination problems are

¹¹⁰ In the United States, the law has generally favored the sharing of confidential business information amongst financial regulators, to the extent necessary for them to perform their functions. See, for example, William Michael Treanor, *Applicability of Trade Secrets Act to Intra-Governmental Exchange of Regulatory Information*, OPINIONS OF THE OFFICE OF LEGAL COUNSEL VOL. 23, 76 (Apr. 5, 1999) (available at <https://www.justice.gov/file/19546/download>). Internationally, bodies like IOSCO and the FSB specify in their organizational documents that they exist in part to facilitate information exchange amongst national regulators. See https://www.iosco.org/library/by_laws/pdf/IOSCO-By-Laws-Section-1-English.pdf; <https://www.fsb.org/wp-content/uploads/FSB-Charter-with-revised-Annex-FINAL.pdf>.

¹¹¹ For example, the IMF notes that in its FSAP program (a program designed to identify the main vulnerabilities in a country that could trigger a financial crisis), “The most common confidential data typically provided to FSAP teams include bank-by-bank balance sheet, liquidity, and supervisory data used in stress tests and, in some cases, data on official reserves.” International Monetary Fund, *Financial Sector Assessment Program: Frequently Asked Questions* (Sep. 10, 2018) (available at <https://www.imf.org/external/np/fsap/faq/index.htm>).

¹¹² Sandboxes, *supra* Note 2 at __.

¹¹³ “A network of regulators from around the world that shares knowledge and best practice relating to innovation, technological trends and emerging issues represents an iterative change from the current mode of collaboration in this space.” GFIN Consultation Document, *supra* note 7 at 8.

¹¹⁴ Allison Carnegie and Austin M. Carson, *Trading Secrets: Disclosure Dilemmas in International Trade*, 1 (Jul. 2, 2018) (available at <https://ssrn.com/abstract=3206689>).

in part a function of (although not wholly attributable to) impediments to information sharing.¹¹⁵ One response to a coordination problem is to create a forum (like the GFIN) to facilitate information sharing. However, merely creating a forum will not solve the problem when there are incentives to under-produce information.¹¹⁶ Such incentives are likely to be particularly strong when the information in question is highly sensitive commercial information about technological developments, and the intended recipients of that information are regulators in other jurisdictions who may pass that information on to innovators participating in their own sandboxes. In such circumstances, we may witness a collective action problem,¹¹⁷ wherein even regulators otherwise motivated to cooperate may refuse to share information with their counterparts because of the expectation that other regulators will shirk their information-sharing obligations. Such a dynamic will create a suboptimal situation where information is cloistered in individual regulatory sandboxes.

Carnegie & Carson argue that, notwithstanding the general preference for transparency and accountability in international law, mechanisms to promote confidentiality and secrecy can be key to remedying collective action problems relating to the sharing of sensitive commercial information.¹¹⁸ They use the World Trade Organization as their case study, and discuss measures that it could take as an institution to protect sensitive information disclosed to it.¹¹⁹ Their proposals have merit in the WTO context, because there, the ultimate purpose of information sharing is to enable the WTO itself to resolve disputes. However, if one accepts that the primary purpose of regulatory sandboxes should be to provide regulators with information, it would be insufficient to set up an international organization to be the confidential repository of such information, and stop the dissemination there. In the sandbox context, what is needed are measures to ensure that regulators use the information they receive only for regulatory purposes, and not for assisting innovation by their private sector. Crafting and policing such measures would be extremely challenging, though, and so information sharing will likely be stymied by collective action problems unless regulators believe their incentives to share outweigh the drawbacks associated with possible technology transfers. Decisions regarding information sharing may also be impacted by issues of legality under disparate international intellectual property regimes.

¹¹⁵ See Notes 64-65 and accompanying text.

¹¹⁶ Carnegie and Carson, *supra* Note 114 at 3.

¹¹⁷ Collective action problems “stem from certain possible divergences between what it is individually rational to do, absent coordination, on the one hand, and what would be both collectively and, therefore, individually optimal to do, were reliable means of coordination available, on the other hand.” Hockett, *supra* Note 64 at 2.

¹¹⁸ Carnegie and Carson, *supra* Note 114 at 31.

¹¹⁹ *Id.* at 2-3.

A regulator's incentives to share information will depend in part on its motivations for adopting a regulatory sandbox in the first place. If the regulator has implemented a regulatory sandbox purely in order to promote the efficiency and competitiveness of its own fintech industry, then it has limited incentives to share information. If the regulator's primary goal is to learn about new technologies in order to improve consumer protection and/or financial stability regulation, then information sharing regarding nascent technologies is more likely. However, given that the adoption of most existing sandboxes appears to have been primarily motivated by concerns about efficiency and competitiveness, and that the GFIN by its terms excludes from its membership any regulator that has not demonstrated a commitment to promoting efficiency and competitiveness in the fintech space, there is little cause to be sanguine that the existence of the GFIN will prevent knowledge from being cloistered within national (and subnational) regulatory sandboxes.

V. CONCLUSION

This Essay has built on my previous work arguing that when it comes to nascent fintech technologies, the regulatory goals of financial stability and consumer protection should be prioritized over promoting efficiency and competition through innovation. One practical corollary of this argument is that if a regulatory sandbox is to be adopted, it should be designed in a way that minimizes any rollback of prudential and consumer protection regulation, and maximizes the ability of financial regulators to learn about new technologies so that they are more informed in pursuing the regulatory goals of financial stability and consumer protection. Unfortunately, many of the sandboxes that have been implemented recently do not conform to this ideal – this Essay has demonstrated that the structures of the Arizona and CFPB regulatory sandboxes are unlikely to produce significant regulatory learning, and has argued that those sandboxes therefore do not compensate the public for the reduction in consumer protection and prudential regulations offered to innovators. This Essay has also noted, however, that the deregulatory impact of these two sandboxes may be limited, because of practical constraints on their utility to innovators.

Other sandboxes, such as the FCA's, are both better (if not perfectly) designed and more appealing to innovators, but this Essay has argued that we should nonetheless be concerned about the fact that the regulators operating these sandboxes have incentives to jealously guard the information they produce, rather than sharing it across sandbox boundaries. Although the GFIN might initially seem like a forum that could facilitate cross-border information sharing, this Essay has argued that when the information in question is commercially sensitive intelligence about fintech innovations, the problem is more than a simple coordination problem. Instead, we are facing a collective action problem that the creation of the

GFIN is unlikely to solve. The GFIN may even have a deleterious impact on consumer protection and financial stability regulation around the world, to the extent that it legitimizes the use of regulatory sandboxes even as it excludes skeptical regulators from its membership. Overall, this Essay concludes that there is reason to be pessimistic about the trajectory of the regulatory sandbox model; the trend suggests that consumer protection and financial stability regulation are likely to be sacrificed in the name of promoting innovation.